

Application No. 10/500,384
Attorney Docket No. 18070-000008/US

AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double-bracketed text indicating deletions.

LISTING OF CLAIMS

1. (PREVIOUSLY PRESENTED) A method for manufacturing a nanostructure in-situ at at least one predetermined point on a supporting carrier, the method comprising:

choosing a suitable material for a substrate to be comprised in the carrier, and creating said substrate,

preparing a template on the substrate, wherein the template covers said predetermined point, and giving said template a proper shape according to the desired final shape of the nanostructure,

causing a film of nanosource material with desired thickness, width and length to be formed on the template, and

causing at least part of the film of nanosource material to restructure from a part of the template, thus forming the desired nanostructure at the predetermined point, said restructuring being in the form of a reassembling on the atomic scale of the nanosource material, resulting in qualitatively new properties relative to the properties of the nanosource material prior to the restructuring, said new properties being manifested in an altered, pre-defined response to external fields or forces.

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2. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the template includes a first and a second area, which have different properties with respect to their interaction with the nanosource material.

3. (PREVIOUSLY PRESENTED) The method of claim 2, wherein the different properties of the two areas with respect to their interaction with the nanosource material is that one area is given stronger adhesive properties than the other.

4. (PREVIOUSLY PRESENTED) The method of claim 3, according to which the area of the template that has the stronger adhesive properties with respect to the nanosource material covers the at least one predetermined point on the substrate, thus bonding the nanostructure to the carrier at that point.

5. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the restructuring is carried out by providing additional energy to the film of nanosource material.

6. (PREVIOUSLY PRESENTED) The method of claim 5, wherein at least part of the additional energy is provided by at least one of a laser beam, ion beam and electron beam which illuminates at least part of the film of nanosource material.

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7. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the restructuring is carried out by doping at least part of the material of the film of nanosource material.

8. (PREVIOUSLY PRESENTED) The method of claim 5, wherein the additional energy or doping is provided to a section of that part of the nanosource material which has been deposited on the area of the template whose material has the weaker adhesive properties.

9. (CURRENTLY AMENDED) The method of claim 1, wherein the restructuring of the nanosource material further comprises is in the form of exfoliation of a portion of the nanosource material from the part of the template.

10. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the nanostructure which is formed is a nanotube which connects two predetermined points on the carrier.

11. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein at least one of the two areas of the template is rectangular.

12. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the film of nanosource material which is caused to be deposited on the template is a film of graphene.

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13. (PREVIOUSLY PRESENTED) A method for manufacturing an electronics device, said device comprising at least a carrier and, arranged on the carrier, at least one component for conducting electrical current between two predetermined points on the carrier, said method comprising:

choosing a suitable material for a substrate to be comprised in the carrier, and creating the substrate,

arranging on the substrate at least one template area, so that the two predetermined points on the carrier are in connection with a template area,

arranging a contact point for external devices to at least one of the two predetermined points,

causing a film of nanosource material with desired thickness, width and length to be deposited on at least one template area, and

causing at least one of said films of nanosource material to at least partially exfoliate from its template and to form a nanotube which connects the two predetermined points on the carrier, wherein said component for conducting electrical current is formed by said nanotube.

14. (PREVIOUSLY PRESENTED) The method of claim 13, wherein the at least one contact point coincides with one of said two predetermined points.

15. (PREVIOUSLY PRESENTED) The method of claim 13, wherein the contact point is prepared before the nanosource material is caused to exfoliate from its template.

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16. (PREVIOUSLY PRESENTED) The method of claim 13, wherein the contact point is prepared after the nanosource material is caused to exfoliate from its template.

17. (PREVIOUSLY PRESENTED) The method of claim 13, wherein at least one of the templates comprises two areas which have different properties with respect to their interaction with the nanosource material.

18. (PREVIOUSLY PRESENTED) The method of claim 17, wherein the different properties of the areas with respect to their interaction with the nanosource material are brought about by letting one area have stronger adhesive properties than the other with respect to the nanosource material.

19. (PREVIOUSLY PRESENTED) The method of claim 13, wherein a plurality of template areas are prepared on the substrate, said template areas being arranged so that a nanotube which is formed by a film of nanotube structure material formed on and subsequently exfoliated from one of these templates will interconnect with another nanotube which in a similar manner is exfoliated from a neighbouring template, thus forming one single continuous nanotube.

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20. (PREVIOUSLY PRESENTED) The method of claim 13, wherein at least one template area that has the stronger adhesive properties with respect to the nanosource material connects the two predetermined points on the substrate.

21. (PREVIOUSLY PRESENTED) The method of any of claim 13, wherein the exfoliation is carried out by providing additional energy to the film of nanosource material.

22. (CURRENTLY AMENDED) The method of claim 21, wherein at least part of the additional energy is provided by at least one of a laser beam, ion beam and electron beam, which illuminates at least part of the film of nanosource material.

23. (PREVIOUSLY PRESENTED) The method of claim 13, wherein the exfoliation is done by doping at least part of the material of the film of nanosource material.

24. (PREVIOUSLY PRESENTED) The method of claim 21, wherein the additional energy is provided to a section of that part of the nanosource material which has been deposited on the area of the template which has the weaker adhesive properties.

25. (PREVIOUSLY PRESENTED) The method of claim 13, wherein the films of nanotube source materials which are deposited on at least one of the templates is a film which will form a nanotube with different electrical properties compared to the electrical properties of a nanotube which will be formed by a film which is deposited on at least one

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of the other templates, thus giving the resulting total nanotube device semiconductor properties.

26. (PREVIOUSLY PRESENTED) The method of claim 13, wherein the film of nanosource material which is caused to be deposited on the templates is a film of graphene.

27. (PREVIOUSLY PRESENTED) The method of claim 26, wherein the tubes are given different electrical properties by virtue of the tubes having different chirality.

28 (PREVIOUSLY PRESENTED) The method according to claim 13, wherein at least one of the two areas of the template is rectangular.

29-31. (CANCELED)

32-35. (CANCELED)

36. (PREVIOUSLY PRESENTED) The method of claim 6, wherein the additional energy or doping is provided to a section of that part of the nanosource material which has been deposited on the area of the template whose material has the weaker adhesive properties.

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37. (PREVIOUSLY PRESENTED) The method of claim 7, wherein the additional energy or doping is provided to a section of that part of the nanosource material which has been deposited on the area of the template whose material has the weaker adhesive properties.

38. (PREVIOUSLY PRESENTED) The method of claim 14, wherein the contact point is prepared before the nanosource material is caused to exfoliate from its template.

39. (PREVIOUSLY PRESENTED) The method of claim 14, wherein the contact point is prepared after the nanosource material is caused to exfoliate from its template.

40. (PREVIOUSLY PRESENTED) The method of claim 22, wherein the additional energy is provided to a section of that part of the nanosource material which has been deposited on the area of the template which has the weaker adhesive properties.

41. (PREVIOUSLY PRESENTED) The method of claim 23, wherein the additional energy or doping is provided to a section of that part of the nanosource material which has been deposited on the area of the template which has the weaker adhesive properties.

42-44. (CANCELED)

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45. (NEW) A method for manufacturing a nanostructure in-situ on a substrate, the method comprising:

preparing the substrate;

forming a template area on the substrate having a length and a width, the template area including a first region defining a releasing portion of the template and a second region defining a fixing portion of the template;

forming a nanosource material film on the template area;

releasing a first portion of the nanosource material film formed on the first region of the template area to form a free edge while fixing a second portion of the nanosource material film formed on the second region of the template area; and

allowing the first portion of the nanosource material film to restructure whereby the free edge bonds to the second portion of the nanosource material film to form the nanostructure.

46. (NEW) The method for manufacturing a nanostructure in-situ on a substrate according to claim 45, wherein:

the nanosource material film comprises a single graphitic layer.

47. (NEW) The method for manufacturing a nanostructure in-situ on a substrate according to claim 45, wherein:

the nanosource material film comprises a plurality of graphitic layers.

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48. (NEW) A method for manufacturing an electronics device comprising:
preparing a substrate;
establishing two conductive points on the substrate;
forming a template area in contact with both conductive points;
establishing an electrical connection between a contact point for an external device
and at least one of the conductive points;
depositing a nanosource material film on the template area;
releasing a first portion of the nanosource material film from a first region of the
template area to form a free edge while fixing a second portion of the nanosource material
film on a second region on the template area;
restructuring the nanosource material film whereby the free edge bonds to the
second portion of the nanosource material film to form a conductive nanotube that
provides an electrical connection between conductive points.

49. (NEW) The method for manufacturing an electronics device according to
claim 48, wherein:
the contact point coincides with one of the conductive points

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